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EXAMINER

CHANG, VICTOR S

ART UNIT PAPER NUMBER

1771

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/637,082	Applicant(s) WILLIAMS ET AL.	
	Examiner Victor S Chang	Art Unit 1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-58 is/are pending in the application.
- 4a) Of the above claim(s) 46-57 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-45 and 58 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2, 4, 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-45 and 58, drawn to heat-setting label sheet, classified in class 428, subclass 41.9.
- II. Claims 46-57, drawn to methods of applying an image to a receptor element, classified in class 156, subclass 60+.

2. The inventions are distinct, each from the other because:

Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the label sheet can be attached to the textile by ultrasonic welding.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Marc Weiner on February 5, 2002 a provisional election was made with traverse to prosecute the invention of I, claims 1-45 and 58. Affirmation of this election must be made by applicant in replying to this Office

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action. Claims 46-57 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Specification

5. The inventors of the claimed Provisional Application U.S. Ser. No. 60/148652 are different from the instant Application. Further, the title of 60/148652 "High-Performance RISC-DSP" is not "Heat-Setting Label Sheet" related.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-45 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, the order of the various layers should be specified.

In claim 1, (ii), re-write with Markush language and clarify the definition of "copolymer blend", i.e., which components can constitute members of the "copolymer"?

In claim 1, (iii), re-write with Markush language.

In claim 8, "adhesive" ~~is~~ should be -- adhesive layer --.

Claim Rejections - 35 USC § 103

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-7, 9-37, and 39-45⁵⁸ are rejected under 35 U.S.C. 103(a) as being unpatentable over Kronzer (US 5798179), and for claim 8 in view of Avery Dennison Corp (WO 96/08367).^{1-37, ^}

Kronzer's invention relates to a multilayer ink-jet printable heat transfer material having cold release properties (column 2, lines 34-35). Kronzer teaches that the first layer typically will be a film or a cellulosic nonwoven web. A second layer overlays the first surface of the first layer and is composed of a thermoplastic polymer having essentially no tack at transfer temperatures (e.g., 177°C.), a solubility parameter of at least about 19 (Mpa)^{1/2}, and a glass transition temperature of at least about 0°C. The thermoplastic polymer of which the second layer is composed may be, by way of example, a hard acrylic polymer or poly(vinyl acetate). A third layer overlays the second layer and includes a thermoplastic polymer which melts in a range of from about 65°C. to about 180°C (column 2, lines 37-48). The third layer functions as a transfer coating to improve the adhesion of subsequent layers in order to prevent premature delamination of the heat transfer material (column 5, lines 48-51). The first layer may be a cellulosic nonwoven web, which may be a latex-impregnated paper. The thermoplastic polymer included in the second layer may have a glass transition temperature of at least about 25°C. The third layer may include a film-forming binder,

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which binder may include a powdered thermoplastic polymer. Additionally, the second layer also may include an effective amount of a release-enhancing additive, such as a divalent metal ion salt of a fatty acid, a polyethylene glycol, or a mixture thereof. The release-enhancing additive may be calcium stearate, a polyethylene glycol having a molecular weight of from about 2,000 to about 100,000, or a mixture thereof (column 2, lines 49-62). If desired, a fourth layer may overlay the third layer in order to provide a printable heat transfer material. The fourth layer typically includes a film-forming binder and a powdered thermoplastic polymer, each of which melts in a range of from about 65°C. to about 180°C. Optionally, a fifth layer may overlay the second layer, in which case the third layer will overlay the fifth layer, rather than the second layer. The fifth layer includes a film-forming binder, which melts in a range of from about 65°C to about 180°C. The resulting printable heat transfer material possess cold release properties (column 2, line 63 – column 3, line 6). If desired, any of the foregoing film layers may contain other materials, such as processing aids, release agents, pigments, deglossing agents, antifoam agents, and the like. The use of these and similar materials is well known to those having ordinary skill in the art (column 8, lines 47-51).

With respect to claim 1, Kronzer shows all the features of the instant claimed invention except for the specific composition of the image receiving opaque layers. However, Kronzer's invention as a heat transfer ink-jet printable label inherently requires image receiving opaque layers, and Kronzer discloses that pigments (for opaqueness) can be included in various layers, and the use of these and similar materials is well known to those having ordinary skill in the art. Therefore, it would have

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been obvious to one having ordinary skill in the art at the time the invention was made to include image receiving layers as opaque layers, since it is well known as taught by Kronzer, motivated by the image enhancement, and by the expectation of success imparted by the prior art.

With respect to claim 2, the ink-jet image receiving layer disclosed by Kronzer (Abstract) is inherently capable of receiving and retaining water based colorants.

With respect to claim 3, the image-receiving layer of the instant claimed invention is equivalent to Kronzer's second layer, which has essentially no tack at transfer temperatures (e.g., 177°C.), (column 2, lines 37-48). This indicates the polymer would inherently have a melting temperature above 200°C, it is common knowledge that the melting temperature of a non-crosslinked amorphous polymer is generally 20-25°C higher than its softening/tackiness temperature.

With respect to claims 4, 12-14, 20-24, 26-27, 30-31 and 36-37, Kronzer has disclosed that the third layer, as part of the image receiving and adhesive layer, may be a melt-extruded film, and other polymers which may be employed include polyesters, polyamides, and polyurethanes. Waxes, plasticizers, rheology modifiers, antioxidants, antistats, antiblocking agents, and other additives may be included as either desired or necessary (column 6, lines 43-59). Further, the Examiner takes Official notice that additives and emulsion polymer blends are commonly used for polymer property modification, in the absence of unexpected results, it would have been obvious to one skill in the art at the time the invention was made to include various additives and/or

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polymer blends in the formulation, motivated by desired thermal and physical properties, and by the expectation of success imparted by the prior art.

With respect to claim 5, it is common knowledge that the acrylic polymer adhesive is suitable for pressure sensitive adhesive application.

With respect to claim 6, Kronzer teaches that the first layer typically will be a film or a cellulosic nonwoven web (column 2, lines 49-50).

With respect to claim 7, the Examiner takes Official notice that it is common knowledge that silicon film can be used as a release layer for adhesive sheet. Therefore, it would be obvious to one having ordinary skill in the art at the time the invention was made to use silicon film as release and support for the heat set transfer adhesive sheet of the instant claimed invention.

With respect to claim 8, Kronzer is silent on placing an adhesive between the support and the Adhesion layer. Avery Dennison's invention is directed toward a multiplayer, pressure-sensitive adhesive construction with two adhesive layers in contact, and the two adhesive layers having different glass transition temperatures (Abstract), which exhibits both good adhesion and good convertibility. Therefore, it would have been obvious to one skill in the art to make a heat setting label sheet as taught by Kronzer, modified by including a pressure sensitive layer between the first (support) layer and the second (Adhesive) layer as taught by Avery Dennison's invention, motivated by improved adhesion and convertibility, and by the expectation of success imparted by the prior art.

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With respect to claim 9, Kronzer teaches that the second layer has a solubility parameter of at least about 19 (Mpa)^{1/2}, and the third layer overlays the second layer and includes a thermoplastic polymer which melts in a range of from about 65°C to about 180°C (column 2, lines 37-48).

With respect to claim 10, Kronzer teaches the optional fourth layer, which is part of the image receiving layer, may comprise nonionic surfactants, such as the complex polymer of ethylene oxide, propylene oxide, and alcohols, etc. (column 8, lines 15-28).

With respect to claim 11, Kronzer teaches the fourth layer may include particles of a thermoplastic polymer. Desirably, the powdered thermoplastic polymer will be selected from the group consisting of polyolefins, polyesters, polyamides, and ethylene-vinyl acetate copolymers (column 7, lines 12-21).

With respect to claims 15-17, 25 and 34-35, it would have been obvious to one having ordinary skill in the art at the time the invention was made to select an ethylene acrylic acid dispersion polymer and film forming binder with Tg in the range of 65°C to about 180°C to meet the typical temperature range of a heat setting operation. Further, it is common to select an elastomer emulsion and/or a polyurethane dispersion, having a Tg in the range of -50°C to 25°C, to adjust the overall Tg of a polymer blend, since it has been held to be within the general skill of worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

With respect to claim 18-19, 29 and 40-45, adjusting the ratio of a polymer blend in an adhesion layer would have been obvious to one having ordinary skill in the art at

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the time the invention was made. It has been held that where general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

With respect claim 28, Kronzer discloses that water-dispersible ethylene-acrylic acid copolymers have been found to be especially effective film-forming binders (column 6, lines 1-3).

With respect to claim 32-33 and 58, the Examiner takes Official notice that the stated amount of dry coat for adhesion and image receiving layers are typical ranges of the amount of dry coat in heat-set transfer adhesive sheets.

With respect to claim 39, Kronzer teaches that the fourth layer may include particles of a thermoplastic polymer having largest dimensions of less than about 50 micrometers. Desirably, the particles will have largest dimensions of less than about 20 micrometers (column 7, lines 12-16).

Claim 38 is not rejected on the basis of prior art.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor S Chang whose telephone number is 703-605-4296. The examiner can normally be reached on 8 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel H Morris can be reached on 703-308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-0771 for regular communications and 703-305-3599 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

VSC

VSC

February 11, 2002

DANIEL ZIRKER
PRIMARY EXAMINER
GROUP 1900-

Daniel Zinker